Gorilla beringei (Eastern Gorilla) 07/09/2016. 02:26

Kingdom Phylum Class Order **Family** Animalia ChordataMammaliaPrimatesHominidae

Scientific

Gorilla beringei Name:

Authority: Matschie, 1903

Infra-

specific See Gorilla beringei ssp. beringei See Gorilla beringei ssp. graueri Taxa

Assessed:

Common Name(s):

English-Eastern Gorilla French -Gorille de l'Est Spanish-Gorilla Oriental

TaxonomicMittermeier, R.A., Rylands, A.B. and Wilson D.E. 2013. *Handbook of the Mammals of the World: Volume* **Source(s):** 3 Primates. Lynx Edicions, Barcelona.

Taxonomic Gorilla has been considered a separate species (*Gorilla beringei*) with two subspecies: Grauer's Gorilla **Notes:** (Gorilla beringei graueri) and the Mountain Gorilla (Gorilla beringei beringei) following Groves (2001).

Assessment Information [top]

Red List Category & Criteria: Critically Endangered A4bcd ver 3.1

Year Published: 2016 2016-04-01 **Date Assessed:**

Plumptre, A., Robbins, M. & Williamson, E.A. Assessor(s):

Mittermeier, R.A. & Rylands, A.B. **Reviewer(s): Contributor(s):** Butynski, T.M. & Gray, M.

Justification:

Eastern Gorillas (Gorilla beringei) live in the mountainous forests of eastern Democratic Republic of Congo, northwest Rwanda and southwest Uganda. This region was the epicentre of Africa's "world war", to which Gorillas have also fallen victim. The Mountain Gorilla subspecies (Gorilla beringei beringei), has been listed as Critically Endangered since 1996. Although a drastic reduction of the Grauer's Gorilla subspecies (Gorilla beringei graueri), has long been suspected, quantitative evidence of the decline has been lacking (Robbins and Williamson 2008). During the past 20 years, Grauer's Gorillas have been severely affected by human activities, most notably poaching for bushmeat associated with artisanal mining camps and for commercial trade (Plumptre et al. 2015). This illegal hunting has been facilitated by a proliferation of firearms resulting from widespread insecurity in the region. Previously estimated to number around 16,900 individuals, recent surveys show that Grauer's Gorilla numbers have dropped to only 3,800 individuals – a 77% reduction in just one generation (*ibid*.) This rate of population loss is almost three times above that which qualifies a species as Critically Endangered.

The roughly 880 Mountain Gorillas have been faring substantially better; one of the two subpopulations is recovering from an all-time low in the 1980s, making Mountain Gorillas the only great ape taxon that has been increasing in number (Gray et al. 2013). In 2016, a census was ongoing and genetic analyses will confirm whether or not the Virunga population is still growing. Therefore, the *Gorilla beringei beringei* subspecies account will not be updated until the results of the 2016 survey are available. Meanwhile, Grauer's Gorillas are declining at an average rate of 5% per year (Plumptre et al. 2015). If this continues unabated, about 93% of Eastern Gorillas will be gone by 2054 (three generations from 1994). Even if the Mountain Gorilla population continues to grow, an overall continuation of the decline of Eastern Gorillas is expected due to the high levels of poaching, loss of habitat as human populations expand, and civil unrest and lawlessness in parts of this species' geographic range. Therefore, Eastern Gorillas qualify as Critically Endangered under criterion A (A4bcd).

Previously published Red List assessments:

2008 – Endangered (EN) 2000 - Endangered (EN)

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Geographic Range [top]

Eastern Gorillas are found in eastern Democratic Republic of Congo (DRC), northwest Rwanda and southwest Uganda.

Gorilla beringei beringei (Matschie, 1903) is restricted to two populations in forests only 25 km apart, but isolated by land that is intensely cultivated and densely settled. One population is in the Virunga Volcanoes, straddling the borders between DRC (Virunga National Park), Rwanda (Volcanoes National Park) and Uganda (Mgahinga Gorilla National Park). The other occurs in Bwindi Impenetrable National Park, Uganda, with a small contiguous portion in Sarambwe Nature Reserve in DRC.

Range

Description: Gorilla beringei graueri (Matschie, 1914) is endemic to the forests of the Albertine Rift escarpment in eastern DRC. It has a discontinuous distribution from the lowlands east of the Lualaba River to the Mitumba Mountains and the Itombwe Massif. Mt. Tshiaberimu in Virunga National Park is the northern limit of Grauer's Gorilla's geographic range. The southern limit is a subpopulation in the Hewa Bora region, Fizi District (Plumptre et al. 2009).

> Although formerly known as the Eastern Lowland Gorilla, G. b. graueri occurs over the widest altitudinal range of any Gorilla, from approximately 600 m to 2,900 m asl, overlapping considerably with the altitudinal range of G. b. beringei (1,100–3,800 m asl; Williamson et al. 2013).

Countries

Native:

occurrence: Congo, The Democratic Republic of the; Rwanda; Uganda

Additional ♦ *Lower elevation limit (metres):* 1100

data:

♦ *Upper elevation limit (metres):* 3800

Range Map: Click here to open the map viewer and explore range.

Population [top]

It is likely that fewer than 5,000 Eastern Gorillas remain. The most recent estimate for Mountain Gorillas is 880 individuals living in two isolated populations in DRC, Rwanda and Uganda (Gray et al. 2013, Roy et al. 2014), making them only great ape taxon that has been increasing in number (Gray et al. 2013). In 2016, new surveys were ongoing and genetic analyses will confirm whether or not the Virunga population is still growing. Therefore, the G. b. beringei subspecies account will not be updated until the results of the 2016 survey are available.

Population: In 1995, the total population of *G. b. graueri* was estimated to be 16,900 individuals (Hall *et al.* 1998a, 1998b). Since then, widespread insecurity and poaching for bushmeat, particularly around mining camps, have led to increasing fragmentation of the population and reduction of numbers. Using survey data collected between 2010 and 2015, Plumptre et al. (2015) estimated that the total number of Grauer's Gorillas remaining in 2015 is only 3,800—a 77% loss since 1994. These population estimates were made using night nest abundance and distribution, and predictive modelling. Nest encounter rates indicate an ongoing rate of decline of ~5% per year at many of the sites surveyed, due to fragmentation and illegal hunting around the many artisanal mining camps and villages located in areas where Grauer's Gorillas occur (Plumptre et al. 2015).

Current Population

Decreasing Trend:

Additional ♦ Continuing decline of mature individuals: Yes

data:

◆ Extreme fluctuations:

No ♦ *Population severely fragmented:* Yes

Habitat and Ecology [top]

Grauer's Gorillas range between 600 and 2,900 m asl in dense mature and secondary lowland tropical rainforest through transitional forests to Afromontane habitat, including bamboo forest, swamp and peat bog. Mountain Gorillas are restricted to elevations above 1,100 m in Bwindi Impenetrable National Park and above 1,850 m in the Virungas by human occupation at lower levels. Their habitat includes many Afromontane vegetation types, including bamboo forest, mixed forest, and subalpine grassland on the volcanic peaks. The Bwindi Mountain Gorillas live at lower elevations, in forest characterised by steep slopes of predominantly mixed forest habitat with a dense understorey.

Diets of Eastern Gorillas vary greatly with elevation and its effect on food availability. Mountain Gorillas are largely herbivorous and feed on stems, pith, leaves, bark, and occasionally ants. Their favoured food items are wild celery, thistles, nettles, bedstraw, wood and roots. Both subspecies feed almost exclusively on young bamboo shoots when they are in season twice a year. Gorillas at lower elevations have a more diverse and seasonal diet. Both Grauer's Gorillas in lowland forest and Bwindi Gorillas are frugivorous.

Habitat and Ecology:

Eastern Gorillas are diurnal and semi-terrestrial. After waking, they feed intensively and then alternate rest, travelling and feeding until night-time. All Gorillas build nests to sleep in, some in trees, but the majority of their nests are on the ground. Gorillas are not territorial, and there is extensive overlap between the annual home ranges of different groups, which vary in size from 6–40 km². Eastern Gorilla groups are polygynous or polygynandrous, with one or more adult males, several females, their offspring, and immature relatives forming the core of relatively stable groups. Median group size is 10 weaned individuals; maximum observed group size is 65 individuals.

<u>Life History</u> (as summarised in Williamson and Butynski 2013)

Male Eastern Gorillas are capable of reproducing when they become "blackbacks" at 8-12 years of age. They are considered "silverbacks" at 12 years of age, and reach their full adult size at 15 years. Female menarche occurs at 6-7 years of age, followed by a period of adolescent sterility. Average age of first parturition is 9.9 years. Females have a reproductive cycle of *ca* 28 days and are receptive for 1-4 days around the time of ovulation. They experience lactational amenorrhea while suckling infants. Young are weaned at 3-4 years of age, from which point they no longer travel on their mothers' back. Females give birth every 3-4 years and generally produce 3-4 surviving offspring during their reproductive life span. Maximum life span is unknown, but it is certainly over 40 years. Eastern Gorillas have a generation time of 18.2 years for females and 20.4 years for males (Langergraber *et al.* 2012).

Systems: Terrestrial

Generation Length 20 (years):

Movement Not a Migrant patterns:

Use and Trade [top]

Use and Gorillas are completely protected by national and international laws in all countries of their range, and it is, **Trade:** therefore, illegal to kill, capture or trade in live Gorillas or their body parts.

Threats [top]

Major threats to Eastern Gorillas are:

1. **Poaching** - Despite the fact that all killing, capture or consumption of great apes is illegal, hunting represents the greatest threat to Grauer's Gorillas (Plumptre *et al.* 2015). A high demand for bushmeat stems from the growing human population, the destabilising impact of armed groups, artisanal miners in remote areas and a general scarcity of affordable domestic protein in rural areas. The permanent presence of people who provide the workforce for exploitation of natural resources

also constitutes a major factor in this problem. Miners working in national parks have admitted to poaching Gorillas, which are relatively easy to hunt with guns and provide large quantities of meat (Kirkby *et al.* 2015). Illegal capture of live infants is a secondary threat (after the mother has been killed and eaten), except on occasions when Mountain Gorilla infants have been the principle target, fulfilling the demands of a fictitious, international market. These orphans usually die or are seized by the wildlife authorities.

- 2. <u>Habitat loss and degradation</u> Agricultural and pastoral activities are leading to continued loss and fragmentation of Gorilla habitat in DRC. At present, there is no commercial logging in the Eastern Gorilla's range, but there is continuous artisanal extraction of resources, which puts added stress on natural habitats. Illegal mining has decimated the lowlands of Kahuzi-Biega National Park, a Grauer's Gorilla stronghold. Destruction of forest for timber, charcoal production and agriculture continues to threaten the isolated Gorilla populations that persist in North Kivu and the Itombwe Massif.
- 3. Civil unrest For two decades, refugees, internally-displaced people and numerous armed groups have placed enormous pressure on DRC's forests through uncontrolled habitat conversion for farmland, harvesting of firewood, timber extraction and mining. Ongoing political unrest and military activity, including rebel occupation of national parks have compounded other threats (Yamagiwa 2003, Plumptre et al. 2015). A recent survey identified 69 armed groups operating in North and South Kivu (Stearns and Vogel 2015), covering important portions of remaining Grauer's Gorilla range. Armed conflict and the collapse of law and order in DRC brought a significant rise in the illegal circulation of military weapons and ammunition. Former traditional hunters have obtained guns, notably AK47s, and the commercial trade in bushmeat increased with the spread of firearms, often supplied by government soldiers and rebel militia. During the 1990s and early 2000s, the Virunga Mountain Gorillas were also impacted by war and instability (Kalpers et al. 2003, Robbins et al. 2011).
- 4. <u>Disease</u> Regulated tourism is a key strategy for Eastern Gorilla conservation; however, transmission of human diseases is a major concern (Gilardi *et al.* 2015), as is excessive disturbance to Gorillas and their habitat (Macfie and Williamson 2010), which could jeopardize conservation programmes. Examples of likely or proven human-to-great ape disease transmission include respiratory viruses (Köndgen *et al.* 2008, Palacios *et al.* 2011, Spelman *et al.* 2013), human herpes simplex virus (Gilardi *et al.* 2014) and scabies (Kalema-Zikusoka *et al.* 2002). Some of these cases have been fatal and most have involved habituated Gorillas or Chimpanzees. Nonetheless, Mountain Gorillas visited by researchers and tourists have consistently shown higher population growth rates than unhabituated Gorillas, which is likely due to the daily monitoring of habituated groups. Continuous monitoring leads to better protection and facilitates veterinary interventions to remove snares and treat respiratory illnesses (Robbins *et al.* 2011); it is almost impossible to treat unhabituated Gorillas.
- 5. <u>Climate change</u> Climate change is predicted to impact the forests of the Albertine Rift escarpment, leading to the upslope migration of species and key Gorilla habitat, notably montane forest (Ayebare *et al.* 2013). Increased temperatures and modified rainfall patterns are also likely to result in changes in food availability and habitat quality (McGahey *et al.* 2013). With almost all montane forest in the eastern highlands now destroyed and converted for agriculture to support some of the highest human population densities in the African Great Lakes region, climate change may have negative effects on food security for the human populations surrounding Gorilla habitat, which could also conservation efforts in the future.

Conservation Actions [top]

Gorilla beringei is listed under Class A of the African Convention and Appendix I of CITES. DRC has a legal framework for managing national parks and wildlife, but has difficulty applying its laws, and political will is limited. Underlying this is a difficult sociopolitical context – a breakdown of law and order during two decades of conflict, combined with poverty and economic insecurity, exacerbates the difficulties of enforcing the law in this region. To address the critical situation faced by Grauer's Gorillas, NGOs are working with the government authorities to support protected areas and reinforce conservation programmes. However, the widespread presence of armed groups in eastern DRC restricts the ability of conservation organisations to operate in the field.

Major Threat(s):

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> One quarter of the predicted range of the Grauer's Gorillas occurs in national parks and nature reserves: the remaining three quarters is currently unprotected (Plumptre et al. 2015). Gazetting of the Itombwe Reserve and establishing a protected area west of Kahuzi-Biega National Park could secure as much as 50% of the subspecies' range.

Actions:

Conservation challenges are likely to increase as the DRC government continues its efforts to stabilize Conservation the east. Security will favour industrial extraction, large-scale agriculture and infrastructure. While development will increase the country's ability to support its human population and participate in the global economy, it will also result in increased human settlement in forest areas critical to Gorillas. Targeted conservation action in priority sites will be vital to slow further demise of this subspecies.

> The entire Mountain Gorilla population resides in protected areas where there are active government programmes. Although the protected areas are relatively well monitored, illegal activities continue in some locations, therefore monitoring the impacts of both illegal activities and conservation actions should continue. While these national parks are legally protected, habitat fragmentation and degradation will be exacerbated if infrastructure developments are allowed within their boundaries.

> To achieve conservation successes, long-term commitment is key, as shown by the international conservation organisations that have been working in difficult circumstances for decades to support the protected area authorities and try to secure the survival of Eastern Gorillas. IUCN has published a detailed conservation strategy with clear priorities for Grauer's Gorillas (Maldonado et al. 2012). See Plumptre et al. (2015) for additional recommendations and see Robbins et al. (2011) for an overview of the impacts of conservation activities on mountain Gorillas in the Virunga Massif.

Classifications [top]

1. Forest -> 1.6. Forest - Subtropical/Tropical Moist Lowland suitability:Suitable season:resident major importance:Yes 1. Forest -> 1.8. Forest - Subtropical/Tropical Swamp suitability:Suitable season:resident major importance:No 1. Forest -> 1.9. Forest - Subtropical/Tropical Moist Montane		<u>Uses</u>	Research Needed	Actions Needed	Actions In Place	Threats	<u>Habitats</u>
suitability:Suitable season:resident major importance:No							
1. Forest -> 1.9. Forest - Subtropical/Tropical Moist Montane							
suitability:Suitable season:resident major importance:Yes							

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Citation: Plumptre, A., Robbins, M. & Williamson, E.A. 2016. Gorilla beringei. The IUCN Red List of

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